

U. S. Patent No.: [5,536,471] 5,721,141 discloses a tube washing

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- U. S. Patent No.: 5,536,471 discloses a bubble flushing syringe for aspirating and dispensing fluids through an open-ended tip. The syringe comprises a piston within a bore formed by a cylindrical wall, wherein the piston forms an annulus with the wall and closed end of the bore, and is capable of reciprocating therein. The syringe further comprises an annular seal seated in the bore and circumventing the piston to retain fluid when the piston reciprocates therethrough. An inlet for directing fluid to the annulus through the wall of the bore and an outlet for directing fluid from the annulus through the wall of the bore to the open-ended tip are positioned proximal to the annular seal and the line generally axially therebetween. A drive device is connected to the piston for reciprocating the piston within the bore. As a result, fluid from the inlet, when connected to a fluid supply, flows around the piston and through the outlet to the open-ended tip, thereby creating a cross-flow pattern in the annulus around the piston as it reciprocates in the bore to flush bubbles through the outlet.
- U. S. Patent No.: 5,721,141 discloses a tube washing system including a tube spinning station having a rotatable chuck and a waste chamber surrounding the chuck for capturing and draining tube fluids expelled from a spun tube driven in rotation by the chuck. A pipette for dispensing wash water into a tube is located centrally within the chuck. There is also a tube elevating device located beneath the tube spinning station, the tube elevating device comprising a freely rotatable tube holder, and lift drive motor provided to vertically move the tube holder towards and way from the chuck. The tube used in the washing system has at least one projection provided on its open end which can interlock with a chuck groove.
- U. S. Patent No.: 5,827,744 discloses method for cleaning a liquid sample probe in which the probe is positioned within a washing chamber inside a wash body and a